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10/525,156	02/18/2005	Paul Kunisch	2002P14200WOUS	3250

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EXAMINER	
HASSAN, SARAH	
ART UNIT	**PAPER NUMBER**
4142	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/525,156	KUNISCH, PAUL	
	Examiner	Art Unit	
	SARAH HASSAN	4142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _18 February 2005_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _15-33_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _15-33_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _18 February 2005_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _02/18/2005, 05/05/2005_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-14 are cancelled. Claims 15-33 are pending in this application.

Priority

2. Acknowledgment is made that this application is a national stage filing under 35 U.S.C. 371 of international application no. **PCT/DE03/02673** filed on **August 8, 2003**.

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119 (a)-(d) based on application Germany 102 40 140.3 filed on August 30, 2002.

Information Disclosure Statement

4. The information disclosure statements (IDS) filed on February 18, 2005 and another filed on May 5, 2005 are in compliance with the provisions of 37 CFR 1.97, and have been considered. A copy is enclosed with this office action.

Drawings

5. The drawings filed on February 18, 2005 are acceptable for examination.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. **Claims 15-21, 26-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et. al., US Publication No. 2001/0040917 published on November 15, 2001 in view of Joeffe et. al., US Patent No. 5856758 published on January 5, 1999.**

8. As to claim 15, Kumar teaches "A communication arrangement for an information transfer over a transmission line operatively connected to a first transmission unit" [see Figure 1]. Kumar specifically teaches a single transceiver connected on a line. The single transceiver device corresponds to "first transmission unit." The arrangement in Figure 1 corresponds to the "communications arrangement" because it provides a transceiver device connected to a line or "transmission line."

"the first transmission unit for communicating information with an input impedance dependent on a current operating state" [see Figure 2; paragraph 0028]. Kumar specifically teaches a high-speed communications device which corresponds to "a communication arrangement" because it transfers information along a transmission line [see paragraph 0022]. In addition, Kumar specifically teaches a communication arrangement that receives data through different impedance states, and this would correspond to "current operating state."

Kumar also teaches "a sensor for detecting the current operating state of the first transmission unit" [see paragraphs 0029 and 0053]. Kumar specifically teaches communication protocols that decide when a high speed communication device is allowed to transmit or receive information based on the impedance state of the incoming signal. Further, these protocols include a line sensing technique that allows for sensing and detecting impedance states of an incoming signal.

Kumar teaches "impedance assigned to the sensor" [see paragraph 0053]. Kumar specifically teaches line sensing protocols that are designed to sense assigned impedance states of the communication system such as high state (HI) and normal state (NI).

Kumar teaches "wherein the current operating state comprises an active operating state or a passive operating state" [see paragraph 0044]. Kumar specifically teaches parallel communication devices that respond to each other based on an operating state of the signal generated from those devices. This operating state represents two main states of the impedance such as normal impedance state (NI) and high impedance state (HI).

Kumar further teaches "the detected current operating state such that the input impedance of the first transmission unit is kept to an approximately constant value" [see paragraph 0053]. Kumar specifically teaches line sensing protocols that are designed to sense assigned impedance states of the communication system or sense "detected current operating state" such as two known and constant states: high state (HI) and normal state (NI).

It is noted however that Kumar does not teach "a switchable electrical component."

On the other hand, Joeffe teaches "a switchable electrical component" [see column 3, lines 19-20; see Figure 7, elements 234, 264]. Joeffe specifically teaches a line driver device that performs impedance synthesis by setting the impedance based on feedback from the feedback resistors (264, 234). The feedback switches from positive state to a negative state or vice versa.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the teachings of Joeffe's providing a line driver that outputs a certain impedance based on positive or negative feedback from an incoming signal transmitted over a transmission line--with the teachings of Kumar particularly directed to high speed communication device coupled to a transmission line and transmits or receives information based on the operating impedance state of an incoming signal directed to the high speed communication device, because both Kumar, Joeffe rely on means of detecting and maintaining impedance matching to reduce reflections and power loss along a transmission line [see Kumar: paragraph 0007; see Joeffe: column 1, lines 8-14].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine the teachings of Joeffe's providing correct impedance levels using a line driver based on feedback from an incoming signal on a transmission line—with the teaching of Kumar particularly directed to high speed communication device coupled to a transmission line and transmits or receives information based on the operating impedance state of an incoming signal directed to the high speed communication device, because that would have allowed users of Kumar to use allocated

enhanced linearity using the line driver circuit, which outputs a high impedance but resulting in lower power loss dissipation, to Kumar's high speed communication device coupled to a transmission line [see Joeffe: column 2: lines 1-10; lines 41-59].

Thus, Joeffe's line driver provides improvement to Kumar's high speed communication device because it would allow for higher output impedance and more importantly the driver would provide enhanced impedance matching to the transmission line by not consuming a lot of power in the line driver circuit [see Joeffe: column 2, lines 41-59].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use Kumar's high speed communication device to incorporate Joeffe's line driver device, because using the known technique of matching the impedance of the load with the impedance of the transmission line to avoid echoing and reflections in order to effectively transmit high speed signals—especially in the case of xDSL—would have been obvious to one of ordinary skill in the art [see Kumar: paragraph 0007; see Joeffe: column 1, lines 8-14].

9. As to claim 16, Kumar teaches "the communication information is sent from the first transmission unit or received by the first transmission unit" [see Figure 3]. Kumar specifically teaches a high speed communication device or transceiver device that transmits a signal with a generated transmit power. In addition, this communications system discloses a transceiver B device that receives incoming data, signals, or "communication information."

10. As to claim 17, Kumar teaches "the communication information is sent from the first transmission unit and received by the first transmission unit" [see Figure 3]. Kumar specifically teaches a high speed communication device or transceiver device that transmits a signal with a generated transmit power. In addition, this communications system discloses a transceiver B device that receives incoming data, signals, or "communication information."
11. As to claim 18, Kumar teaches "the first transmission unit" [see Figure 2; paragraph 0028]. Kumar specifically teaches a transceiver that corresponds to a high speed communications device that transmits data along a transmission line, and this corresponds to "first transmission unit."

Kumar also teaches "the impedance and the sensor being adapted" [see paragraph 0053]. Kumar specifically teaches line sensing protocols that are designed to sense assigned impedance states of the communication system such as high state (HI) and normal state (NI). These sensing protocols that are located at the receiving end of the transceiver device adapt to the impedance changes on the transmission line by transmitting during a high impedance state.

Kumar teaches "open in the active operating state and closed in the passive operating state"[see paragraph 0044]. Kumar specifically teaches parallel communication devices that respond to each other based on an operating state of the signal generated from those devices. This operating state represents two main states of

the impedance such as normal impedance state (NI) and high impedance state (HI). When in the HI state, this means the communications device is ready to transmit the signal.

On the other hand, Joeffe teaches "a plurality of operational amplifiers for transmitting the information onto the transmission line" [see Joeffe: Figure 7, elements 220, 250, 243]. Joeffe specifically teaches a line driver circuit that includes more than one operational amplifier (elements 250 and 220). This line driver is capable of outputting an impedance to the transmission line [see Figure 7, element 243; column 3: lines 19-20].

Joeffe also teaches "the switchable electrical component comprising a switch for switching between outputs of the plurality of operational amplifiers" [see Figure 7, element 263]. Joeffe specifically teaches a resistor (263) that is connected to the input of the first operational amplifier (220) and is connected to the output of the second operational amplifier (250). This resistor corresponds to "switchable electrical component" because it provides an increased or decreased amount of current in the circuit depending on the resistance of the resistor (263).

12. As to claim 19, Kumar teaches "the communication arrangement." [see Figure 2; paragraph 0028]. Kumar specifically teaches a high-speed communications device which corresponds to "a communication arrangement" because it transfers information along a transmission line [see paragraph 0022].

Joeffe teaches "the switchable electrical component comprises an electrical resistor." [see Figure 7, element 263]. Joeffe specifically teaches a resistor (263) that is

connected to the input of the first operational amplifier (220) and is connected to the output of the second operational amplifier (250). This resistor corresponds to "switchable electrical component" because it provides an increased or decreased amount of current in the circuit depending on the resistance of the resistor (263).

13. As to claim 20, Kumar teaches "the communication arrangement." [see Figure 2; paragraph 0028]. Kumar specifically teaches a high-speed communications device which corresponds to "a communication arrangement" because it transfers information along a transmission line [see paragraph 0022].

Joeffe teaches "the switchable electrical component is operatively connected to an electrical resistor." [see Figure 7, element 263, 234]. Joeffe specifically teaches a resistor (263) that is connected to the input of the first operational amplifier (220) and is connected to the output of the second operational amplifier (250). This resistor corresponds to "switchable electrical component" because it provides an increased or decreased amount of current in the circuit depending on the resistance of the resistor (263). In addition, another resistor (234) is connected to the resistor (263) which corresponds to switchable electrical component because they share a common node.

14. As to claim 21, Kumar teaches "a transmission that is embodied in accordance with an xDSL transmission method" [see paragraph 0047]. Kumar specifically teaches high speed communications device that incorporate and use DSL transceiver modems.

15. As to claim 26, Kumar teaches “communicating information over a transmission line.” [see Figure 2; paragraph 0028]. Kumar specifically teaches a high-speed communications device which corresponds to “a communication arrangement” because it transfers information along a transmission line [see paragraph 0022].

Kumar teaches “the current operating state having an active or a passive operating state” [see paragraph 0044]. Kumar specifically teaches parallel communication devices that respond to each other based on an operating state of the signal generated from those devices. This operating state represents two main states of the impedance such as normal impedance state (NI) and high impedance state (HI).

Kumar also teaches “an input impedance dependent on a current operating state" [see Figure 2; paragraph 0028]. Kumar specifically teaches a high-speed communications device which corresponds to “a communication arrangement” because it transfers information along a transmission line [see paragraph 0022]. In addition, Kumar specifically teaches a communication arrangement that receives data through different impedance states, and this would correspond to "current operating state."

Kumar also teaches “a sensor for detecting the current operating state of the transmission unit” [see paragraphs 0029 and 0053]. Kumar specifically teaches communication protocols that decide when a high speed communication device is allowed to transmit or receive information based on the impedance state of the incoming signal. Further, these protocols include a line sensing technique that allows for sensing and detecting impedance states of an incoming signal.

Kumar teaches "impedance assigned to the sensor" [see paragraph 0053]. Kumar specifically teaches line sensing protocols that are designed to sense assigned impedance states of the communication system such as high state (HI) and normal state (NI).

Kumar further teaches "the detected current operating state such that the input impedance of the first transmission unit is kept to an approximately constant value" [see paragraph 0053]. Kumar specifically teaches line sensing protocols that are designed to sense assigned impedance states of the communication system or sense "detected current operating state" such as two known and constant states: high state (HI) and normal state (NI).

It is noted however that Kumar does not teach "a switchable electrical component."

On the other hand, Joeffe teaches "a switchable electrical component" [see column 3, lines 19-41]. Joeffe specifically teaches a line driver device that performs impedance synthesis by setting the impedance based on feedback received by the operational amplifier in the line driver. The feedback switches from positive state to a negative state or vice versa.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the teachings of Joeffe's providing a line driver that outputs a certain impedance based on positive or negative feedback from an incoming signal transmitted over a transmission line--with the teachings of Kumar particularly directed to high speed communication device coupled to a transmission line and transmits or receives information based on the operating impedance state of an incoming signal

directed to the high speed communication device, because both Kumar, Joeffe rely on means of detecting and maintaining impedance matching to reduce reflections and power loss along a transmission line [see Kumar: paragraph 0007; see Joeffe: column 1, lines 8-14].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine the teachings of Joeffe—providing correct impedance levels using a line driver based on feedback from an incoming signal on a transmission line—with the teaching of Kumar particularly directed to high speed communication device coupled to a transmission line and transmits or receives information based on the operating impedance state of an incoming signal directed to the high speed communication device, because that would have allocated enhanced linearity using the line driver circuit, which outputs a high impedance but resulting in lower power loss dissipation, to Kumar's high speed communication device coupled to a transmission line [see Joeffe: column 2: lines 1-10; lines 41-59].

Thus, Joeffe's line driver provides improvement to Kumar's high speed communication device because it would allow for higher output impedance and more importantly the driver would provide enhanced impedance matching to the transmission line by not consuming a lot of power in the line driver circuit [see Joeffe: column 2, lines 41-59].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use Kumar's high speed communication device to incorporate Joeffe's line driver device, because using the known technique of matching the

impedance of the load with the impedance of the transmission line to avoid echoing and reflections in order to effectively transmit high speed signals—especially in the case of xDSL—would have been obvious to one of ordinary skill in the art [see Kumar: paragraph 0007; see Joeffe: column 1, lines 8-14].

16. As to claim 27, Joeffe teaches "a plurality of operational amplifiers for transmitting information onto the transmission line" [see Joeffe: Figure 7, elements 220, 250, 243]. Joeffe specifically teaches a line driver circuit that includes more than one operational amplifier (elements 250 and 220). This line driver is capable of outputting an impedance to the transmission line [see Figure 7, element 243; column 3: lines 19-20].

17. As to claim 28, Kumar teaches "the impedance and the sensor being adapted" [see paragraph 0053]. Kumar specifically teaches line sensing protocols that are designed to sense assigned impedance states of the communication system such as high state (HI) and normal state (NI). These sensing protocols that are located at the receiving end of the transceiver device adapt to the impedance changes on the transmission line by transmitting during a high impedance state.

Kumar teaches "open in the active operating state and closed in the passive operating state" [see paragraph 0044]. Kumar specifically teaches parallel communication devices that respond to each other based on an operating state of the signal generated from those devices. This operating state represents two main states of the impedance such as normal impedance state (NI) and high impedance state (HI).

When in the HI state, this means the communications device is ready to transmit the signal.

On the other hand, Joeffe teaches "outputs of the amplifiers" [see Joeffe: Figure 7, elements 220, 250, 243]. Joeffe specifically teaches a line driver circuit that includes more than one operational amplifier (elements 250 and 220). This line driver is capable of outputting an impedance to the transmission line [see Figure 7, element 243; column 3: lines 19-20].

Joeffe also teaches "the switchable electrical component' and "switch" [see Figure 7, element 263]. Joeffe specifically teaches a resistor (263) that is connected to the input of the first operational amplifier (220) and is connected to the output of the second operational amplifier (250). This resistor corresponds to "switchable electrical component" and "switch" because it provides an increased or decreased amount of current in the circuit depending on the resistance of the resistor (263).

18. As to claim 29, Kumar teaches "the communication arrangement." [see Figure 2; paragraph 0028]. Kumar specifically teaches a high-speed communications device which corresponds to "a communication arrangement" because it transfers information along a transmission line [see paragraph 0022].

Joeffe teaches "the switchable electrical component comprises an electrical resistor." [see Figure 7, element 263]. Joeffe specifically teaches a resistor (263) that is connected to the input of the first operational amplifier (220) and is connected to the output of the second operational amplifier (250). This resistor corresponds to

"switchable electrical component" because it provides an increased or decreased amount of current in the circuit depending on the resistance of the resistor (263).

19. As to claim 30, Kumar teaches "a transmission is embodied in accordance with an xDSL transmission method" [see paragraph 0047]. Kumar specifically teaches high speed communications device that incorporate and use DSL transceiver modems.
20. As to claim 31, Kumar teaches "an external circuit arrangement which can be operatively connected to the transmission unit comprises the sensor and the impedance" [see paragraph 0028, 0053]. Kumar specifically teaches high speed communications devices that include the capability of sensing the incoming signal's impedance on the transmission line in order to decide when to begin transmitting.

21. As to claim 32, Kumar teaches "a circuit arrangement for external connection to a transmission unit, the transmission unit for communicating information over a transmission line" [see paragraph 0028, 0053]. Kumar specifically teaches high speed communications devices that include the capability of sensing the incoming signal's impedance on the transmission line in order to decide when to begin transmitting.

Kumar further teaches "a current operating state of the transmission unit, the current operating state having an active or a passive operating state" [see paragraph 0044]. Kumar specifically teaches parallel communication devices that respond to each other based on an operating state of the signal generated from those devices. This operating state represents two main states of the impedance such as normal impedance

state (NI) and high impedance state (HI). When in the HI state, this means the communications device is ready to transmit the signal.

Kumar also teaches "an impedance assigned to a sensor" [see paragraph 0053]. Kumar specifically teaches line sensing protocols that are designed to sense assigned impedance states of the communication system such as high state (HI) and normal state (NI).

Kumar teaches "an input impedance of the transmission unit is kept to an approximately constant value" [see paragraph 0053]. Kumar specifically teaches line sensing protocols that are designed to sense assigned impedance states of the communication system or sense "detected current operating state" such as two known and constant states: high state (HI) and normal state (NI).

Kumar does not teach "a switchable electrical component, the switchable electrical component having a switch and provided as a function of the detected current operating state."

Joeffe teaches "a switchable electrical component, the switchable electrical component having a switch and provided as a function of the detected current operating state" [see Figure 7, element 263]. Joeffe specifically teaches a resistor (263) that is connected to the input of the first operational amplifier (220) and is connected to the output of the second operational amplifier (250). This resistor corresponds to "switchable electrical component" because it provides an increased or decreased amount of current in the circuit depending on the resistance of the resistor (263). The output of

the circuit (see Figure 7) V_{out} corresponds to "detected current operating state" because it outputs the voltage necessary to provide for impedance matching on a transmission line.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the teachings of Joeffe's providing a line driver that outputs a certain impedance based on positive or negative feedback from an incoming signal transmitted over a transmission line--with the teachings of Kumar particularly directed to high speed communication device coupled to a transmission line and transmits or receives information based on the operating impedance state of an incoming signal directed to the high speed communication device, because both Kumar, Joeffe rely on means of detecting and maintaining impedance matching to reduce reflections and power loss along a transmission line [see Kumar: paragraph 0007; see Joeffe: column 1, lines 8-14].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine the teachings of Joeffe's providing correct impedance levels using a line driver based on feedback from an incoming signal on a transmission line—with the teaching of Kumar particularly directed to high speed communication device coupled to a transmission line and transmits or receives information based on the operating impedance state of an incoming signal directed to the high speed communication device, because that would have allocated users of Kumar to use enhanced linearity using the line driver circuit, which outputs a high impedance but resulting in lower power loss dissipation, to Kumar's high speed communication device coupled to a transmission line [see Joeffe: column 2: lines 1-10; lines 41-59].

Thus, Joeffe's line driver provides improvement to Kumar's high speed communication device because it would allow for higher output impedance and more importantly the driver would provide enhanced impedance matching to the transmission line by not consuming a lot of power in the line driver circuit [see Joeffe: column 2, lines 41-59].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use Kumar's high speed communication device to incorporate Joeffe's line driver device. Using the known technique of matching the impedance of the load with the impedance of the transmission line to avoid echoing and reflections in order to effectively transmit high speed signals—especially in the case of xDSL—would have been obvious to one of ordinary skill in the art [see Kumar: paragraph 0007; see Joeffe: column 1, lines 8-14].

22. As to claim 33, Kumar teaches "the sensor." [see paragraphs 0029 and 0053]. Kumar specifically teaches communication protocols that decide when a high speed communication device is allowed to transmit or receive information based on the impedance state of the incoming signal. Further, these protocols include a line sensing technique that allows for sensing and detecting impedance states of an incoming signal.

23. Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et. al., US Publication No. 2001/0040917 published on November 15, 2001 in view of Joeffe et. al., US Patent No. 5856758 published on January 5, 1999 further in view of deBriggard, US Patent No. 6211719 published on April 3, 2001.

24. As to claim 22, Kumar teaches "the communication arrangement." [see Figure 2; paragraph 0028]. Kumar specifically teaches a high-speed communications device which corresponds to "a communication arrangement" because it transfers information along a transmission line [see paragraph 0022].

Kumar teaches "a second transmission unit for sending or receiving information" and teaches "is operatively connected to the transmission line" [see Figure 3; paragraph 0011]. Kumar specifically teaches more than one transceiver device as detailed in Figure 3. Each transceiver device is connected to the transmission line and is capable of sending or receiving information on the transmission line.

Kumar, Joeffe do not teach "embodied in accordance with an ISDN transmission method."

deBriggard teaches "embodied in accordance with an ISDN transmission method" [see column 4: lines 16-19]. deBriggard specifically teaches and ISDN circuit card that is utilized at a central office or communications device.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the teachings of deBriggard—providing a power control circuit that operates a line driver when transmissions are requested by a subscriber--with the teachings of Kumar and Joeffe particularly directed to a line driver that operates on a

high speed communication device coupled to a transmission line and transmits or receives information based on the operating impedance state of an incoming signal directed to the high speed communication device, because Kumar, Joeffe, and deBriggard rely on means of detecting and maintaining impedance matching to reduce reflections and power loss along a transmission line [see Kumar: paragraph 0007; see Joeffe: column 1, lines 8-14; see deBriggard: column 5, lines 33-42].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine the teachings of deBriggard—providing a power control circuit that operates a line driver when transmissions are requested by a subscriber—the with the teaching of Kumar particularly directed to high speed communication device coupled to a transmission line and transmits or receives information based on the operating impedance state of an incoming signal directed to the high speed communication device, because that would have allocated ISDN communications arrangement in addition to the xDSL communications arrangement provided in Kumar's high speed communications device [see deBriggard: column 4, lines 16-19] .

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use deBriggard's power control circuit and line driver to incorporate ISDN in Kumar's communications device. Using the known technique of matching the impedance of the load with the impedance of the transmission line to avoid echoing and reflections in order to effectively transmit high speed signals—especially in the case of xDSL—would have been obvious to one of ordinary skill in the art [see

Kumar: paragraph 0007; see Joeffe: column 1, lines 8-14; see deBriggard: column 5, lines 33-42].

25. As to claim 23, Kumar teaches "the communication arrangement." [see Figure 2; paragraph 0028]. Kumar specifically teaches a high-speed communications device which corresponds to "a communication arrangement" because it transfers information along a transmission line [see paragraph 0022].

    Kumar teaches "a second transmission unit for sending and receiving information" and teaches "is operatively connected to the transmission line" [see Figure 3; paragraph 0011]. Kumar specifically teaches more than one transceiver device as detailed in Figure 3. Each transceiver device is connected to the transmission line and is capable of sending or receiving information on the transmission line.

    Kumar, Joeffe do not teach "embodied in accordance with an ISDN transmission method."

    deBriggard teaches "embodied in accordance with an ISDN transmission method" [see column 4: lines 16-19]. deBriggard specifically teaches and ISDN circuit card that is utilized at a central office or communications device.

26. As to claim 24, Kumar teaches "the sensor is adapted so that an activation signal transmitted over the transmission line is detected, and that when the activation signal is detected the active operating state of the first transmission unit is established." [see paragraphs 0029 and 0053]. Kumar specifically teaches communication protocols that decide when a high speed communication device is allowed to transmit or receive information based on the impedance state of the incoming signal. Further, these

protocols include a line sensing technique that allows for sensing and detecting impedance states of an incoming signal or "activation signal."

27. As to claim 25, Kumar teaches "the activation signal is a wake-up signal in accordance with an ITU-T G.922 standard" [see paragraph 0016, 0029, 0053]. Kumar specifically teaches ITU-T G.922 standard employed in a MATLAB simulation of the communications device or transceivers. In addition the "activation signal" is generated by the transceiver devices and is then read and sensed by the line sensing protocols to enable transmission on one of the communications device or transceivers.

Conclusion

The following prior art was relied upon:

a) US Publication No. 20010040917

b) US Patent No. 5856758

c) US Patent No. 6211719

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARAH HASSAN whose telephone number is (571)270-3456. The examiner can normally be reached on Monday through Friday (available 8:00 AM - 5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Srirama Channavajjala can be reached on 571-272-4108. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner, Art Unit 4142
/S. H./

/Srirama Channavajjala/
Supervisory Patent Examiner, Art Unit 4142